

Biom mineralization of silica associated with the colonization of *Cyanidium caldarium* in the acidic hot springs

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Biom mineralization processes of silica associated with the colonization of acido- and thermo-philic unicellular red alga, *Cyanidium caldarium* in green biomats were examined in this study. The Green biomats are distributed in Higashi Hot Springs, Satsuma-Iwo Jima Island, Kagoshima prefecture, Japan, and mainly consisted of *C. caldarium* under acidic condition ($< \text{pH } 2$). The colonies of *C. caldarium* cells have been gradually changed into angular morphology decreasing an organic matter and P, S, elements. Natural cultivated examination indicated that the development of colonization depended on solution pH, nutrients, Si-concentration, growth rate of cells and eco-system with bacterial condition, and played an important role in Si-biom mineralization.